AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 10/020,483 Filing Date: December 12, 2001

Title: SYLLABIC SEARCH ENGINE AND RELATED METHODS (as amended)

Assignee: Intel Corporation

IN THE TITLE

Please amend the title as follows:

SYLLABIC SEARCH ENGINE ENGINES AND RELATED METHODS

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IN THE SPECIFICATION

Please make the paragraph substitutions indicated below. The specific changes incorporated in the substitute paragraphs are shown in the following marked-up versions of the original paragraphs.

The sub-title on page 1, line 6 is amended as follows:

Technical Field of the Invention

The paragraph beginning on page 1, line 7 is amended as follows:

The <u>inventive</u> subject matter present invention relates generally to the field of data processing and, more particularly, to a search engine for finding information via a sequence of syllable counts.

The sub-title on page 1, line 10 is amended as follows:

Background Information of the Invention

The sub-title on page 2, line 19 is amended as follows:

Detailed Description of Embodiments of the Invention

The paragraph beginning on page 2, line 20 is amended as follows:

In the following detailed description of embodiments of the invention, reference is made to the accompanying drawings that which form a part hereof, and in which is shown by way of illustration specific preferred embodiments in which the inventive subject matter inventions may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice them the invention, and it is to be understood that other embodiments may be utilized and that logical, procedural, mechanical, and electrical changes may be made without departing from the spirit and scope of the inventive subject matter present invention. Such embodiments of the inventive subject matter may be referred to, individually and/or collectively, herein by the term "invention" merely for convenience and without intending to voluntarily limit Assignee: Intel Corporation

the scope of this application to any single invention or inventive concept if more than one is in fact disclosed. The following detailed description is, therefore, not to be taken in a limiting sense, and the scope of the inventive subject matter present invention is defined only by the appended claims.

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The paragraph beginning on page 2, line 29 is amended as follows:

The <u>inventive subject matter present invention</u> provides a syllabic search function for locating desired documents stored within computing devices and/or computer networks. Various embodiments are illustrated and described herein. According to one embodiment, an improved search engine for a computing device or computer network utilizes a search string comprising, in addition to known words, numbers representing a syllable count for each unknown or uncertain word. One or more pattern-matching algorithms are utilized to search a document database for any document that matches the input search string.

The paragraph beginning on page 3, line 18 is amended as follows:

Search engines built in accordance with the inventive subject matter present invention can effectively and quickly locate documents which otherwise could not be located, and they can significantly increase the commercial value of computer software, computer systems, and/or computer networks in which they are featured.

The paragraph beginning on page 3, line 26 is amended as follows:

FIG. 1 and the following discussion are intended to provide a brief, general description of a suitable computing environment in which certain aspects of the illustrated inventive subject matter invention may be implemented. An exemplary system to provide a syllabic search function includes a machine or computing device 2 having system bus 3. Typically, attached to bus 3 are one or more processors 4, a display 6, and one or more data entry elements 8 such as a keyboard, mouse, trackball, joy stick, touch-sensitive screen, or other well-known user interface data entry element(s). Also attached to bus 3 is a memory 10, which can include any suitable memory device(s) like read only memory (ROM); random access memory (RAM); hard drive; removable media drive for handling compact disks (CDs), digital video disks (DVDs), diskettes,

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magnetic tape cartridges, and other types of data storage; or the like. Additional elements can also be attached to bus 3 such as a modem 12, a network interface unit 14, one or more speakers. 16, and other suitable devices 18.

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The paragraph beginning on page 4, line 24 is amended as follows:

The inventive subject matter invention may be implemented in conjunction with program modules, including functions, procedures, data structures, application programs, etc. for performing tasks, or defining abstract data types or low-level hardware contexts. Program modules may be stored in memory 10 and associated storage media, e.g., hard-drives, floppy-disks, optical storage, magnetic cassettes, tapes, flash memory cards, memory sticks, digital video disks, chemical storage, and/or biological storage. Program modules may be delivered over transmission environments, including network 24, in the form of packets, serial data, parallel data, propagated signals, etc. Program modules may be used in a compressed or encrypted format, and they may be used in a distributed environment and stored in local and/or remote memory, for access by single and multi-processor machines, portable computers, handheld devices (e.g., Personal Digital Assistants (PDAs)), cellular telephones, pagers, personal entertainment devices (e.g. digital music players, digital video players, etc.), one-way or two-way radios, or the like.

The paragraph beginning on page 7, line 14 is amended as follows:

In one embodiment, the <u>inventive subject matter</u> invention is used to identify a song title based on a search string that includes nothing more than an ordered sequence of syllable counts from the song lyric. In another embodiment, one or more known words can also be input as part of the ordered sequence of syllable counts, in place of the syllable count(s) for such known word(s). In yet another embodiment, the <u>inventive subject matter invention</u> is used to identify a movie or television episode based upon a search string from the dialog. In further embodiments, a search string can be used to identify a speech from a database containing speech documents; to retrieve a poem title from a database of poetry; to identify a book title from a quotation; and the like.

The paragraph beginning on page 10, line 15 is amended as follows:

Moreover, the <u>inventive subject matter present invention</u> is tolerant of missing words, groups of words, or of all words in a user's search string, provided that every missing word is replaced with a corresponding syllable count in the same order as the word appears within the phrase or document. If a conventional search engine were used on only easily understood words, such as "Mississippi", "computer", "music", it would return an enormous number of potential "hits", whereas the <u>inventive subject matter present invention</u> can narrow the number of hits considerably if syllable counts are substituted for unknown words.

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The paragraph beginning on page 10, line 22 is amended as follows:

The <u>inventive subject matter present invention</u> also is tolerant of misspelled words in the user search string. A conventional search engine can retrieve a large quantity of false hits if a search string contains a misspelled word, whereas the <u>inventive subject matter present invention</u> need not give significant weight to misspelled words and can give proportionally greater weight to sequences of syllable counts. In addition, the user can substitute a syllable count for any word whose spelling the user is uncertain about.

The paragraph beginning on page 10, line 28 is amended as follows:

In addition, the <u>inventive subject matter present invention</u> could be used as a supplement or background to a conventional search engine, in order to improve the quality of its searches.

The paragraph beginning on page 10, line 30 is amended as follows:

It should be understood that the operations shown in FIGS. 3A, 3B, and 4 are merely representative and not exclusive, and that many other different alternative operations could be implemented using the concepts taught by the <u>inventive subject matter present invention</u>.

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The paragraph beginning on page 11, line 7 is amended as follows:

Implementing a syllabic search engine is carried out by suitable instructions in one or more computer programs that are stored in and executed by one or more devices 2, 26, and 28 in FIG. 1. One of ordinary skill in the art is capable of writing suitable instructions to implement the objectives and features of the <u>inventive subject matter invention</u> as described herein.

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On page 11, line 12, please delete the sub-title "Conclusion".

The paragraph beginning on page 11, line 13 is amended as follows:

The <u>inventive subject matter present invention</u> provides a syllabic search function for locating desired documents within computing devices and/or computer networks. Various embodiments have been illustrated and described herein. According to one embodiment, an improved search engine, for a computing device or computer network, utilizes a search string comprising, in addition to known words, numbers representing a syllable count for each unknown or uncertain word. One or more pattern-matching algorithms are utilized to search a document database for <u>a</u> document that matches the input search string.

The paragraph beginning on page 11, line 29 is amended as follows:

Search engines built in accordance with the <u>inventive subject matter</u> present invention can effectively and quickly locate documents which otherwise could not be located, and they can significantly increase the commercial value of computer software, computer systems, and/or computer networks in which they are featured.

The paragraph beginning on page 12, line 6 is amended as follows:

The various elements depicted in the drawings are merely representational and are not drawn to scale. Certain proportions thereof may be exaggerated, while others may be minimized. The drawings are intended to illustrate various implementations of the <u>inventive subject matter invention</u>, which can be understood and appropriately carried out by those of ordinary skill in the art.

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The paragraph beginning on page 12, line 10 is amended as follows:

Having described and illustrated the principles of the <u>inventive subject matter</u> invention with reference to illustrated embodiments, it will be recognized that the illustrated embodiments can be modified in arrangement and detail without departing from such principles. And, though the foregoing discussion has focused on particular embodiments, other configurations are contemplated. In particular, even though expressions such as "in one embodiment", "in another embodiment", or the like are used herein, these phrases are meant to generally reference embodiment possibilities, and they are not intended to limit the <u>inventive subject matter</u> invention to particular embodiment configurations. As used herein, these terms may reference the same or different embodiments that are combinable into other embodiments.

The paragraph beginning on page 12, line 19 is amended as follows:

Consequently, in view of the wide variety of permutations to the embodiments described herein, this detailed description is intended to be illustrative only, and it should not be taken as limiting the scope of the <u>inventive subject matter invention</u>.

The paragraph beginning on page 12, line 22 is amended as follows:

Although specific embodiments have been illustrated and described herein, it will be appreciated by those of ordinary skill in the art that any arrangement or process that is calculated to achieve the same purpose may be substituted for the specific embodiments shown. This application is intended to cover any adaptations or variations of the <u>inventive subject matter</u> present invention. Therefore, it is manifestly intended that <u>embodiments of this inventive subject matter invention</u> be limited only by the claims and the equivalents thereof.